

DETECTING INFRARED RADIATION

ABSTRACT OF THE DISCLOSURE

According to one embodiment, detecting radiation includes receiving a first laser drive field at a cell comprising a medium having a number of states. The first
5 laser drive field has a frequency approximately equivalent to a transition frequency between a first state and a second state. A second laser drive field having a frequency approximately equivalent to a transition frequency between the first state and a third
10 state, and an infrared field having a frequency approximately equivalent to a transition frequency between the third state and a fourth state are received. The medium has a transition between the second state and the third state substantially forbidden to support
15 optimal coherence on the transition between the second state and the third state. The infrared field is upconverted to generate a detectable field having a frequency approximately equivalent to a transition frequency between the second state and the fourth state.

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